

Medicine

Perennial Hay Fever—An Etiological Classification.—The management of patients manifesting hay fever-like symptoms throughout the year is so directly dependent upon a knowledge of the underlying causes that some etiological classification should be attempted. Except for minor differences the symptomatology of perennial hay fever is essentially like that of its sister malady, the seasonal variety. Nasal obstruction, sneezing, and the presence of a thin, watery nasal discharge are present in both conditions. The occurrence of attacks throughout the year and a lesser degree of itching of the eyes and pharynx are distinctive of perennial hay fever. Because of the similarity in symptoms the designation hay fever has been applied to both the seasonal and nonseasonal forms of the affection. This designation as applied to the perennial disease, although well established in medical usage, is unfortunate because seasonal hay fever is usually a pollen disease. An analysis of the perennial cases studied during the past ten years has made it clear that a multiplicity of etiological factors may cause the symptoms of this type of hay fever.

The causes of perennial hay fever are chiefly three in number—sensitization, infection, and disturbances in the autonomic nervous system. A clinical grouping of patients under these three headings has been found helpful in diagnosis and treatment. For purposes of clearness brief mention will be made of the distinguishing features of the main groups and subgroups.

I. SENSITIZATION

1. *Pollen.*—Perennial symptoms may result from sensitization to a single pollen present in the air most of the year. For instance, in southern California, Bermuda grass has practically a perennial pollinating season. Or sensitivity may exist to a number of pollens, some of which may be present in the air at different seasons of the year. This is more likely to occur, however, in tropical or subtropical climates.

2. *Animal Epidermal Substances.*—The perennial type of hay fever caused by the dandruff and hair of horses, dogs, cats, rabbits, etc.,¹ and by various feathers² is not uncommon. The symptoms in these patients may not be marked and are frequently mistaken for colds.

3. *Pollen and Animal Epidermal Substances.*—Multiple sensitization to the allergenic substances present in pollen and animal hairs is not uncommon. The development of symptoms throughout the year in a patient with seasonal hay fever is usually due either to multiple sensitization of this kind or to a secondary infection of the paranasal sinuses.

4. *Orris Root*³.—Sensitization to orris root is now recognized as a frequent cause of perennial hay fever. This sensitizing substance is contained in many face powders, tooth and bath powders, scented talcs, and sachets. Elimination therapy alone is often unsuccessful because of the wide-

spread occurrence of orris root in house and street dust. The allergic factor in orris-sensitive patients is frequently overlooked. It is particularly important that every patient who suffers from an obstinate and obscure rhinitis be tested with an active extract of orris root before any rhinological surgery is undertaken.

5. *Foods.*⁴—That the inhalation of flour may give rise to nasal symptoms simulating hay fever has long been known; but that similar symptoms occurring throughout the year may be caused by the ingestion of certain foods is becoming better known. This type of perennial hay fever has been more often observed in children sensitive to such common foods as milk, eggs, and wheat. In them the nasal symptoms are frequently accompanied by cutaneous lesions such as urticaria and eczema.

II. INFECTION

That infection of the upper respiratory tract ranks as the second great factor in the development of perennial hay fever is gaining wide recognition. Infection may be primary or secondary to sensitization. It is now well realized by rhinologists that infection of the maxillary or more particularly of the ethmoidal group of sinuses may give rise to a train of symptoms resembling hay fever.⁵ The discharge may be watery at first, but sooner or later becomes mucopurulent or purulent. This change in the nature of the nasal discharge may be the first indication that the infection is primary and not grafted on an allergic condition. Secondary infection of the paranasal sinuses is, however, a very frequent complication of seasonal hay fever and usually explains the development of symptoms throughout the year in a patient who, prior to this complication, had only seasonal symptoms. A careful history and rhinological examination will aid in the differentiation between perennial symptoms due to a primary infection or to an infection secondary to sensitization.

III. VASOMOTOR RHINITIS

The term "vasomotor rhinitis" or hyperesthetic rhinitis has been used loosely in the general and rhinological literature to include not only those patients having perennial symptoms, but also those suffering from attacks of seasonal hay fever. It would be more accurate, however, to reserve the name "vasomotor rhinitis" for that large group of perennial hay fever patients whose histories and cutaneous tests do not suggest any allergic background and in whom infection can be ruled out. The symptoms in this group are characterized by marked chronicity and severity. Many patients with vasomotor rhinitis continue for long periods with almost constant nasal obstruction and suffer from paroxysms of violent sneezing which is machine gun-like in character and accompanied by a profuse watery nasal discharge. Rhinological examination shows only a pale, shiny, and water-logged mucosa. Usually some intranasal pathological lesion is suspected and occasionally a deviated septum, a chronic infection in one or other sinus, or a focus in the

teeth may be found and treated with but little success. As the name implies, vasomotor rhinitis has been thought to be due to a disturbance in the functions of the autonomic nervous system. There is also evidence that deficiencies in the endocrine glands, particularly the pituitary and thyroid, may play a part in the etiology of vasomotor rhinitis.^{6,7}

Even though an exhaustive history and painstaking examination lead to a correct diagnosis, the treatment of this group of patients is so beset with stumbling blocks that the results obtained are often disappointing. Paranasal sinus infection and the presence of a highly sensitive nervous system greatly affect the prognosis. Successful treatment is in a measure determined by our ability to cope with these factors.

SAMUEL H. HURWITZ, San Francisco.

REFERENCES

1. Bayleat, Ray M.: Hay Fever and Asthma—Their Cause, Prevention, and Treatment. Second edition. Philadelphia: F. A. Davis Company, 1928.
2. Brown, Grafton Tyler: Perennial Hay Fever Due to Parrot Feathers, J. A. M. A., 1929, 92, 465.
3. Phillips, E. W.: Orris Root Coryza, Southwestern Med., 1927, 11, 299.
4. Eyer mann, Charles H.: Food Allergy as the Cause of Nasal Symptoms, J. A. M. A., 1928, 91, 312.
5. Sewall, Edward C.: External Operation on the Ethmosphenoid-Frontal Group of Sinuses Under Local Anesthesia, Arch. of Otolaryngol., 1926, 4, 377.
6. Selfridge, G.: Endocrine Glands and Their Relation to Vasomotor Disturbances of the Air Passages, Hay Fever and Asthma, with the Past Year's Report, Calif. State Jour. Med., 1919, Vol. xvii, 106, 139.
7. Novak, F. G., Jr.: Hyperesthetic Rhinitis and Myxedema, Ann. Otol., Rhinol., and Laryngol., 1927, Vol. xxxvi, 829.

Medicine

Cross-sensitization with Denatured Proteins. In seeking the probable cause of allergy, clinicians have directed their main attention to previous gastro-intestinal or parenteral absorption or injection of the specific protein to which the patient reacts, or to collateral proteins of the same sensitization group. That protein specificity can be altered by such factors as cooking, drying, decomposition or mixture with antiseptics or food preservatives has been largely overlooked. A very suggestive example of such alteration has been recently reported by W. A. Collier of the Bacteriological Institute, Department of Agriculture, Buenos Aires.¹

Collier denatured horse serum by the addition of Bayer 205, and reports that the horse proteins thus "heterogenized" have acquired the power of collateral anaphylactic sensitization to cow serum. Collier, of course, warns against too hasty conclusion from this observation; but it is evident that he has opened up a very fertile field of speculation in hygiene.

W. H. MANWARING, Stanford University.

REFERENCE

1. Collier, W. A.: Die Beeinflussung des Anaphylaktischen Schuckes durch Bayerkörper. Zeitschr. f. Immunitätsf., 1927, Vol. 52, pp. 191-201.

Pediatrics

Intestinal Protozoa in Children.—In a recent article in this journal on intestinal protozoa,¹ Doctor Barrow called attention to certain symptomatology and therapy as they applied to adults. Very little mention has been made in the literature or in our standard textbooks about parasitic infection in children. With the present more intensive study of pediatrics it seems timely to call attention to the possibility of children being infected with the same parasitic protozoa as adults.

Many vague symptoms, such as failure to gain in weight, poor appetite, listlessness, nocturnal restlessness, and sometimes a little looseness of the bowels, possibly only one or two loose stools a day, on careful microscopic examination of the stool by a competent laboratory will be found to be referable to infestation of the intestinal tract by protozoa. As a rule the flagellates do not cause the above mentioned symptoms as often as do the *Entameba histolytica*.

In children having a history of frequent attacks of diarrhea, with mucus and blood, careful stool analysis should be made, not of a single specimen, but of repeated specimens to rule out positively any protozoa.

The medicinal treatment is essentially the same as that of adults, only in smaller dosage. As a rule treatment is effectual.

The last word in intestinal protozoa infections has not been written, and the more the excretions of children are studied the more frequently will answers be found to questions that are now puzzling.

A. J. SCOTT, Los Angeles.

REFERENCE

1. California and West. Med., Vol. xxix, No. 5, p. 303 et seq.

Tularemia in Sheep in Nature.—A report recently made public by the United States Public Health Service points out the proved occurrence of tularemia in sheep in nature. This opens the question of the possibility of human infection from the handling of infected carcasses. Infection is known to be definitely possible through the primary contamination of the hands with the tissue of crushed infected ticks held in the wool or with tick excrement which is commonly present in large masses. The fingers might also become contaminated by contact with the decayed tissue which sometimes develops at the points where infected ticks have been attached. The chance that infected meat might reach the market and be a source of danger to persons in slaughterhouses and packing houses and to the consuming public seems less likely, but cannot be altogether dismissed, especially if animals are slaughtered for immediate local consumption.

Further studies with reference to tularemia in sheep caused by the wood tick are being considered. These studies will endeavor to determine (1) the extent to which it is concerned in wood-tick caused conditions; (2) to determine the geographical limits of the occurrence, which are wider than indicated by present data; (3) to secure more detailed epidemiological, symptomatological, and pathological data; and (4) to determine whether the meat of infected slaughtered sheep is a possible source of human infection.—*United States Health News*.